HISTORY OF VACCINATION.

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Mr. President—By your request I beg leave to present to the Association a brief history of the introduction of cowpox as a prophylactic measure against smallpox.

Variola had, for many centuries, proved itself to be one of the most fatal and dreadful scourges to which the human family was subject. It was no respector of persons, the king in his palace and the peasant in his hovel being alike its victim. Its fatality was not its only characteristic for its treacherousness and its power to maim and disfigure was almost equally to be dreaded. If time allowed it would be at this time interesting to consider the practice of inoculation that was in vogue the large part of the eighteenth century.

No doubt the practice had been in use in the far east for a long time. This subject is now of particular interest to us because we find the custom enabled those who at the close of the last century were endeavoring to prove cowpox antagonistic to smallpox, to prove their work.

No difficulty existed in testing the efficiency of vaccination as a preventive measure for the people often were clamoring for inoculation and hence this easy, ready and efficient means was at hand to test the value of the method. An interesting account of the introduction of the practice of inoculation into England is found in history.

It seems that the custom was observed and approved by Lady Mary Wortley Montague in 1717. Her husband was at this time the ambassador at the Ottoman court, and in a letter of this date to her friend, Miss Mary Chiswell, she says:

"I am well satisfied of the safety of the experiment since I intend to try it on my dear little son. I am patriot enough to take pains to bring this useful invention into fashion in England; and I should not fail to write to some of our doctors very particularly about it if I knew any one of them that I thought had virtue enough to destroy such a considerable branch of their revenue for the good of mankind. But that distemper is too beneficial to them not to expose to all their resentment the hardy wight that should undertake to put an end to it. Perhaps if I live to return, I may, however, have courage to war with them."

You will observe that this has almost the modern ring about it. Her son was perhaps the first English subject that received inoculation, which he did in March, 1717. No account is given to show that any-

thing was done until 1721. Soon it was approved by many of the profession and we find that it was a common practice for the remainder of the century.

Its history shows its beneficent influence and if nothing better had been discovered I have no doubt that under proper restrictions it would have been in common use to-day.

Objection to the method was based upon the fact that it was accompanied by some fatality and also the fact that each person inoculated might be the nucleus for the spread of the disease by contagion in the usual way.

Very properly now for these reasons inoculation in most countries is prevented by law.

If cowpox was not preventive I would at this time urge inoculation for it might be done with a minimum of danger by selection of the virus and the isolation of the subject during the course of the disease.

Many inoculators claimed to make the disease milder and hence less objectionable by preparatory treatment and by taking the virus at an early period in the history of the case from which it was derived. Sutton, Dimsdale and others so taught. Dimsdale was summoned to Russia in 1768 to inoculate the Empress. This submission on the part of royalty gave an impetus to the custom. Dimsdale is said to have been made a Baron of the Russian Empire, was appointed Councillor of State, Physician to her Imperial Majesty and was awarded the handsome fee of $50,000 and in addition was given an annuity of $2,500.

Evidently there was some appreciation of his services.

History seems to show pretty conclusively that during the last quarter of the eighteenth century there was a widespread belief among dairymen and dairymaids that those who contracted the disease of cowpox from milking cows, thereby infecting any abrasions or sores on their hands, were not subject to smallpox. No doubt exists in my mind that such opinion prevailed before the work of the immortal Edward Jenner was done in confirmation of it.

He is none the less to be honored on that account for he only seems to have been possessed of the courage of his convictions and pursued his observations and experiments until he practically made a demonstration. Often in the arts we find it is not the man who first conceives the idea who is the inventor, but the one who has the ability, the pluck, the genius, if you will, to take hold, to keep hold and never let go until he realizes the fruit of his labor, and he is given the honor. All honor then to the name of Jenner, for he never quit until the world acknowledged his claim.

I doubt if he was the first man who intentionally vaccinated with cowpox virus to render persons immune as against smallpox.

It seems credible to me that there is truth in the statement made that in the year 1774 one Benjamin Jesty vaccinated his wife and two sons directly from the cow and that the efficiency of his work was demonstrated by their refusing to contract smallpox by means of inoculation.

In proof of this fact we find that Mr. Jesty visited London in 1805 and that a dozen or more members of the Jennerian Society signed a statement that he had without precedent vaccinated his family thirty-one years before that time and that he justly deserved the gratitude of his country, etc.

It is stated that his tombstone bears record to the fact that he vaccinated his wife and sons in 1774.

No proof exists so far as I know that at this time Jenner had vaccinated anyone with cowpox, but his observations concerned those only who had contracted the disease from the cow in the act of milking her.

Jenner was early possessed of the idea that the origin of the cowpox was a disease of the horse known as grease in the heel. He claimed that men taking care of the horse so diseased with grease in the heel infected the cow and then the milkers were infected. He even urged that grease in the heel of the horse, pox in the cow and smallpox in man were most probably one and the same disease. Cowpox was now styled cow smallpox. He met with many obstacles in his work and no doubt one of less determination would have given up in despair.

Much work was to be done, for several of the lower animals besides the cow were subject to diseases somewhat similar to cowpox and the inoculation of persons with virus from these diseases showed phenomena similar to vaccinia, and hence advocates claimed that these likewise gave immunity to man from smallpox. No doubt many persons at this time received vaccination with virus that possessed no protective power and hence confusion was worse confounded. Those who opposed him brought forward many instances where those who had been vaccinated afterward contracted smallpox and he answered the objection by suggesting that they had not received immunity for the reason that they had received a spurious vaccination.

It is perhaps true this day as well that many have only a quasi-protection because they rely upon a spurious vaccination.

Many today estimate the success of the vaccination by the degree of soreness developed rather than by any characteristic of the specific eruption.

We ought not to wonder at the mistakes of that day when we remember the little knowledge possessed by even the most learned in regard to the science of either physiology or pathology, and still more when we remember that bacteriology was unknown.

There are germs and germs. What an advantage it would have been to Jenner to have been possessed of an inkling of mixed infection.

Many objections urged against him and his claim could be easily surmounted with the knowledge of the present day. Jenner seems, from history, to have been unsuccessful in his first efforts to make public his convictions and the results of his inquiry.

He submitted a paper to the Royal Society of London styled "An Inquiry Into the Natural History of a Disease Known in Gloucestershire by the Name of Cowpox."

This was not accepted for publication by the society, but was published by Jenner himself with additions in 1798.

Afterward other editions were published and by permission dedicated to his Majesty, the King.

Unquestionably history shows conclusively that vaccinia has been known to give immunity from smallpox.

I will not worry you with statistics that show so well the benefits that have come to the human family from the priceless boon for these are read and known of all men. I think this association should proclaim again and from the house tops its faith in the protective power of vaccination against smallpox, for its enemies are organized and aggressive in their warfare against it. Allow me to say that I think it was unfortunate that Jenner claimed that vaccinia invariably and forever guaranteed immunity perfect in character.

It does not seem reasonable to expect that any acquired immunity shall be better or more lasting than that furnished by the disease. Nothing is gained by claiming too much. It is certainly proved that the degree of immunity may vary with time and circumstance. Since bacteriology has become a science more profound study is being made, particularly with the view of obtaining a virus that shall be pure.

If only a pure culture can be furnished then, by following strict aseptic precautions we can safely say that the disease vaccinia is not a danger to the life nor even a menace to the health of those receiving it. We will then have a measure for protection as perfect as it is possible to obtain. Allow me to suggest that immunity ought to be secured by repeating at intervals the vaccination until the system shows itself to be no longer subject to its influence; and again at intervals, if smallpox prevails, for fear that susceptibility may have been redeveloped.